



Commonwealth of Massachusetts  
Executive Office of Energy & Environmental Affairs

## Department of Environmental Protection

Western Regional Office • 436 Dwight Street, Springfield MA 01103 • 413-784-1100

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Date: March 11, 2015

Mr. Greg Rooke  
Titeflex Commercial, Inc.  
603 Hendee Street  
Springfield, MA 01104-3003

**RE: Springfield**  
Transmittal No.: X263803  
Application No.: WE-14-027  
Class: SM-25  
FMF No.: 130233  
**CONDITIONAL PLAN APPROVAL**

Dear Mr. Rooke:

The Massachusetts Department of Environmental Protection ("MassDEP"), Bureau of Air and Waste, has reviewed your Limited Plan Application ("Application") listed above. This Application concerns the proposed construction and operation of one additional extruder and associated drying oven to be controlled by an existing regenerative thermal oxidizer (RTO) at your manufacturing facility located at 603 Hendee Street in Springfield, Massachusetts ("Facility").

This Application was submitted in accordance with 310 CMR 7.02 Plan Approval and Emission Limitations as contained in 310 CMR 7.00 "Air Pollution Control," regulations adopted by MassDEP pursuant to the authority granted by Massachusetts General Laws, Chapter 111, Section 142 A-J, Chapter 21C, Section 4 and 6, and Chapter 21E, Section 6. MassDEP's review of your Application has been limited to air pollution control regulation compliance and does not relieve you of the obligation to comply with any other regulatory requirements.

MassDEP has determined that the Application is administratively and technically complete and that the Application is in conformance with the Air Pollution Control regulations and current air pollution control engineering practice, and hereby grants this **Plan Approval** for said Application, as submitted, subject to the conditions listed below.

**This Plan Approval specifies emission limits for the new extruder #8 and modifies facility-wide emissions. Provisions for existing extrusion machines (#1 through #7) and miscellaneous activities that emit volatile organic compounds (VOC), both approved**

**through Plan Approval #1-P-10-030<sup>1</sup>, have been included in this document in order to increase the monitoring and recordkeeping frequency for these emission units from yearly to monthly. Otherwise, provisions from all previously issued Plan Approvals remain in effect.**

**Provisions from Plan Approval #1-P-10-030 related to the existing RTO are applicable to the new #8 extrusion machine and have been included as well.**

Please review the entire Plan Approval, as it stipulates the conditions with which the Facility owner/operator ("Permittee") must comply in order for the Facility to be operated in compliance with this Plan Approval.

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<sup>1</sup> Plan Approval #1-P-10-030 (dated April 28, 2011, Transmittal #X233137) references Plan Approval #1-P-94-133 (Transmittal #X92918).

## 1. DESCRIPTION OF FACILITY AND APPLICATION

Titeflex Commercial, Inc. (Titeflex) produces flexible hose for the aerospace and automotive industries using an extrusion process. The new extrusion machine, named Emission Unit (EU) 8, will be similar to two previously installed extrusion machines at Titeflex (machines #1 and #3). Previous Plan Approvals are as follows:

Plan Approval #	Date Approved	Description
#1-P-94-133 and #1-P-94-40	April 21, 1995	<ul style="list-style-type: none"> <li>• Installation of seven (7) extrusion machines/sinter ovens;</li> <li>• Nine (9) miscellaneous VOC emitting operations;</li> <li>• VOC control with a recuperative thermal oxidizer (RTO);</li> </ul>
#1-P-10-030	July 16, 2010	<ul style="list-style-type: none"> <li>• Conditional Approval for the installation and operation of a new replacement RTO;</li> <li>• Update to extrusion machine emission limits;</li> <li>• Update to the number of miscellaneous VOC emitting operations to five (5) and reduction of the total emission limit;</li> </ul>
	April 28, 2011	<ul style="list-style-type: none"> <li>• Final Approval to change RTO operating parameters post RTO performance testing;</li> </ul>

Flexible hose is manufactured from a mixture of polytetrafluoroethylene ("PTFE") and a solvent, Isopar G Fluid (Isopar), which serves as a processing aid during extrusion. Isopar is a source of volatile organic compound (VOC) emissions. Based on material safety data sheet (SDS) information, it is assumed that 100% of the Isopar is release as a VOC during production<sup>2</sup>.

The PTFE mixture is compressed into a billet which is then loaded into the head of an extruder. Once the operator sets the extrusion parameters, a ram forces the material through a die to produce PTFE tube. "Cone scrap" is a byproduct of the process. Some of it is reused to push the next billet through the extrusion machine. The cone scrap contains VOCs and so it is stored in a covered container as it accumulates. When the cone scrap is no longer useable, it is placed into a sealed drum for eventual sale and reprocessing. It was previously determined that the cone scrap is less than 0.5% by weight of the total PTFE mixture extruded. However, the cone scrap was not deducted from the estimated potential emissions. Upon completion of a run the ram is withdrawn, the remaining billet stub is removed, and the start sequence is partially or completely re-initiated depending on whether the same product or a new product will be made.

The tube passes directly from the extruder into an electric sintering oven where radiant heat cures the tube and evaporates the Isopar. Vapors are drawn away through oven exhaust ducts while a separate exhaust system is used to draw vapors from within the tubing. After leaving the oven, the flexible hose product moves to the winding room.

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<sup>2</sup> According to Safety Data Sheet, Isopar G Fluid has a density of 6.26 pounds per gallon and VOC content of 6.25 pounds per gallon, as determined by Environmental Protection Agency Method 24.

It was demonstrated on November 2, 2010 that the capture efficiency surrounding the extrusion processes was 100%<sup>3</sup>. The extrusion room (including the mixing area) and individual sintering ovens are all within an "extrusion tower" which was established as a permanent total enclosure (PTE). The miscellaneous sources of VOC emissions vent to the atmosphere uncontrolled.

Captured VOC emissions will be routed to an existing CMM Group, LLC model # RTO 1500-M-97 regenerative thermal oxidizer (RTO) designed to operate in the range of 3,000 to 15,000 standard cubic feet per minute (scfm). As stated in Plan Approval #1-P-10-030, exhaust to the RTO will fluctuate depending on the number of extruders in operation. Each existing extruder/sinter oven (#1 through #7) and PTFE mixing booth is equipped with a 600 or 800 scfm blower. Extruder/sinter oven #8 is rated to exhaust 500 scfm, keeping the total flow rate within the design parameters of the RTO. In accordance with Provision #3 of Plan Approval #1-P-10-030, flow rates to the RTO will be maintained at a minimum of 3,000 scfm.

The RTO combusts process fumes released from the extrusion tower. The RTO is preheated and maintained at the 1500 °F set-point operating temperature by means of a natural gas fired RTO burner rated at 5.0 MMBtu/hr heat input. The 391 cubic feet combustion chamber provides a minimum 0.46 seconds retention time at 1350 degrees Fahrenheit. After passing through a heat exchanger, the oxidized gas stream exits the stack 27 feet above ground elevation with a temperature of 250 to 450 °F.

Compliance stack testing of the RTO took place on November 2, 2010 as well. It was determined that the control device operates with a destruction efficiency of 99%. The minimum RTO exit temperature needed to sustain this destruction efficiency was determined to be 1,484°F.

In the event of an emergency shutdown of the thermal oxidizer, exhaust air from the processing areas and extruders would be vented to the atmosphere in order to eliminate the potential for fire and explosion. An alarm would sound in the extruder control room to inform the operators that the automatic shutdown sequence has been activated. Each extruder is deactivated automatically by stopping the ram and then starting a chain feed system which lowers the already extruded tubing down through the oven. Titeflex has stated that all eight extruder ovens would be free of product within a few minutes.

A vortex damper controller automatically adjusts the damper opening in reaction to pressure changes within the duct caused by the startup or shutdown of the extruder/oven blowers. The controller is designed to maintain a set negative pressure in the duct. The gas stream contains sufficient oxygen to support combustion. A purge air damper is included in the system for startup, dilution, and emergency purposes.

### **VOC and Hazardous Air Pollutant (HAP) Emissions Limits:**

To estimate emissions from the new extruder, Titeflex used 1994 maximum material usage data in which the amount of Isopar used and the run time was recorded for each machine during three shifts (1 day). The new extruder will be designed and built to have a similar capacity to extruder #1 and #3. From the above trials, extruder #3 had the highest hourly Isopar usage of 7.49 pounds of Isopar per hour, so this rate was assumed for the new extruder. Assuming that all of the Isopar is emitted during the process and

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<sup>3</sup> Due to conformance with the EPA Method 204 criteria for a permanent total enclosure (PTE, 40 CFR 51, Appendix M, Subpart AA).

operations take place 8,760 hours per year with 100% capture and 98% destruction of the VOCs, the worst-case emission rate of VOCs from the new extruder is 0.66 tons per year.

In accordance with Plan Approval #1-P-10-030 (dated 4/28/2011), the facility-wide VOC emissions limit for the seven existing extruders and other miscellaneous activities is 11.07 tons per year. The emission limit was determined by adding 2.45 tons per year (tpy) of VOC estimated from the seven (7) extrusion machines and 8.62 tpy VOC from the following miscellaneous<sup>4</sup> uncontrolled units:

- Kopex Wrap - tubing wrap manufacturing process;
- Various Parts Washers - cold cleaning metal degreasers containing mineral spirits;
- Brake Drum Cleaning - maintenance operation on winding equipment;
- Hand Cleaning - isopropyl alcohol used to clean some finished products to meet customer specifications; and
- Paint Striping - manual painting application.

This Plan Approval adjusts the facility-wide VOC emission limit from 11.07 tpy to 11.7 tpy to account for the new extrusion machine. It also adds a facility-wide HAP emission limit to assure no future major source requirements are applicable. VOC and HAP emission limits for all activities are summarized in Table 2:

### **Applicable Regulatory Requirements**

The facility is subject to the visible emission requirements of 310 CMR 7.06, the dust, odor, construction and demolition requirements of 310 CMR 7.09 and the noise reduction requirements of 310 CMR 7.10.

The facility has stated in its application that it is not subject to the USEPA New Source Performance Standards (NSPS) or the USEPA National Emission Standards for Hazardous Air Pollutants (NESHAPs).

### **Best Available Control Technology (BACT)**

The following has been determined as BACT for the installation and operation of the new extrusion machine:

- Emissions from PTFE mixing, extruding, and drying will be captured at 100% PTE (demonstrated by compliance with EPA Method 204);
- Emissions will be routed to a RTO with a minimum 98% destruction efficiency;
- The system will have a mechanical interlock to prevent the extrusion process from proceeding until the RTO reaches a minimum of 1,500°F;
- A mechanical interlock will shut down the extrusion process if the exit temperature of the RTO is less than 1,484°F;
- A continuous emission monitor (CEM) will track RTO exit temperature, date, and time;

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<sup>4</sup> From Table 1 of Plan Approval #1-P-10-030. In accordance with 310 CMR 7.00 (VOC definition), brake drum cleaning operations using acetone are not included in the facility emission limits.

- In accordance with 310 CMR 7.18, the facility will implement work practices to minimize the evaporation of VOCs. Provisions for good storage and handling practices have been included in Table 6, Special Terms and Conditions.

## 2. **EMISSION UNIT (EU) IDENTIFICATION**

Each Emission Unit (EU) identified in Table 1 is subject to and regulated by this Plan Approval:

<b>Table 1</b>			
<b>EU#</b>	<b>Description</b>	<b>Design Capacity</b>	<b>Pollution Control Device (PCD)</b>
8	Jennings model 36-8T ram extrusion machine and associated sintering oven	8-inch bore 100-Ton hydraulic capacity	CMM Group, LLC Regenerative Thermal Oxidizer Model # RTO 1500-M-97
1-7	Existing extrusion machines/sintering ovens #1 through #7	various	
9	Miscellaneous emission units <sup>1</sup> <ul style="list-style-type: none"> <li>• Kopex Wrap;</li> <li>• Various Parts Washers;</li> <li>• Brake Drum Cleaning;</li> <li>• Hand Cleaning; and</li> <li>• Paint Stripping.</li> </ul>	various	N/A

**Table 1 Key:**

EU# = Emission Unit Number  
 PCD = Pollution Control Device  
 N/A = Not applicable

**Table 1 Notes:**

1 - From Table 1 of Plan Approval #1-P-10-030, dated 4/29/2011

### 3. APPLICABLE REQUIREMENTS

#### A. OPERATIONAL, PRODUCTION and EMISSION LIMITS

The Permittee is subject to, and shall not exceed the Operational, Production, and Emission Limits as contained in Table 2 below:

<b>Table 2</b>			
<b>EU#</b>	<b>Operational / Production Limit</b>	<b>Air Contaminant</b>	<b>Emission Limit<sup>1</sup></b>
8	Solvent (Isopar G Fluid): ≤ 10,481 gal/yr ≤ 2,096 gal/mo	VOC	0.66 TPY 0.13 TPM
1-7	Solvent (Isopar G Fluid): ≤ 39,200 gal/yr; ≤ 7,840 gal/mo.	VOC	2.45TPY 0.5 TPM
1-8	<div>Solvent (Isopar G Fluid) VOC content: ≤ 6.25 lbs/gal</div> <div>100% Capture Permanent Total Enclosure (PTE)</div> <div>Existing CMM Group, LLC model # RTO 1500-M-97 with 98% destruction efficiency</div> <div>Exhaust flow to the RTO: ≥ 3,000 scfm ≤ 15,000 scfm</div> <div>≥ 1,500°F minimum temperature before start-up.</div> <div>≥ 1484°F (3-minute average) RTO exit temperature</div>	VOC	-
9	<div>Kopex Wrap lubricant (mineral spirits): ≤ 6.50 lb<sub>VOC</sub>/gal ≤ 1,138 gal/yr ≤ 228 gal/mo</div> <div>Parts Washers cleaning solution (mineral spirits): ≤ 6.50 lb<sub>VOC</sub>/gal ≤ 1,230 gal/yr released to atmosphere ≤ 246 gal/mo</div>	<div>VOC</div> <div>VOC</div>	<div>3.7 TPY 0.7 TPM</div> <div>4.0 TPY 0.8 TPM</div>

Table 2			
EU#	Operational / Production Limit	Air Contaminant	Emission Limit <sup>1</sup>
9	Hand Cleaning solution (isopropyl alcohol): $\leq 6.59 \text{ lb}_{\text{VOC}}/\text{gal}$ $\leq 273 \text{ gal/yr}$ $\leq 55 \text{ gal/mo}$	VOC	0.9 TPY 0.2 TPM
	Paint Striping: $\leq 3.78 \text{ lb}_{\text{VOC}}/\text{gal}$ $\leq 7.4 \text{ gal/yr}$ $\leq 7.4 \text{ gal/mo}$	VOC	0.02 TPY 0.01 TPM
Facility-wide	-	VOC	11.7 TPY 2.4 TPM $\leq 0.71 \text{ lb/hr}$ (3-hour average)
		Total HAP	0.5 TPY 0.1 TPM

**Table 2 Key:**

EU# = Emission Unit Number  
 VOC = Volatile Organic Compounds  
 TPM = tons per month  
 TPY = tons per consecutive 12-month period  
 °F = Degrees Fahrenheit  
 HAP = Hazardous Air Pollutant

$\text{lb}_{\text{VOC}}/\text{gal}$  = pound of VOC per gallon  
 gal/yr = gallon per year  
 gal/mo = gallon per month  
 RTO = Regenerative thermal oxidizer  
 $\leq$  = less than or equal to  
 $\geq$  = greater than or equal to

**Table 2 Notes:**

1 – Annual emission limits for EU #1 through #7 and #9 are from Plan Approval #1-P-10-030 dated April 28, 2011.

**B. COMPLIANCE DEMONSTRATION**

The Permittee is subject to, and shall comply with, the monitoring, testing, record keeping, and reporting requirements as contained in Tables 3, 4, and 5 below:

<b>Table 3</b>	
<b>EU#</b>	<b>Monitoring and Testing Requirements</b>
8	1. In accordance with 310 CMR 7.02(8)(a)2., the Permittee shall install an interlock that will shut down the extrusion process if the RTO exit temperature drops below 1,484°F.
1-8	2. In accordance with 310 CMR 7.02(3)(d), the Permittee shall monitor to demonstrate compliance for each calendar month and 12 consecutive months, the emission limits in Table 2. Such monitoring shall include, but is not limited to: <ul style="list-style-type: none"> <li>a. The date;</li> <li>b. Gallons of Isopar G Fluid used;</li> <li>c. VOC/HAP content of the Isopar G Fluid;</li> <li>d. Weight of PTFE mix used;</li> <li>e. Weight of cone scrap sent offsite for recovery.</li> </ul>
	3. In accordance with 310 CMR 7.02(3)(d) and 310 CMR 7.02(8)(a)2., the Permittee shall monitor the RTO exit temperature using a continuous monitoring device. The temperature sensor readings will be used by MassDEP to determine compliance with the minimum temperature requirement demonstrated during stack testing (Provision 6).
	4. In accordance with 310 CMR 7.02(3)(d), the Permittee shall equip the RTO with both visual and audible alarms set to alarm if the RTO temperature falls below 1,484 °F (3 minute average).
	5. In accordance with 310 CMR 7.02(8)(a)2., the Permittee shall maintain an interlock that will shut down the extrusion process if the RTO exit temperature drops below 1,484°F.

<b>Table 3</b>	
<b>EU#</b>	<b>Monitoring and Testing Requirements</b>
1-8	<p>6. In accordance with 310 CMR 7.02(3)(d) and 310 CMR 7.13, the Permittee shall test the capture efficiency of the extrusion tower, the maximum hourly VOC emission rate (3 hour average), and the minimum RTO exit temperature for the determined VOC destruction removal efficiency of the CMM Group, LLC RTO under maximum loading within 120 days after startup of EU 8. The emission testing shall conform to the following requirements:</p> <ul style="list-style-type: none"> <li>a. Capture efficiency shall be determined by US EPA Method 204 for Permanent Total Enclosures (PTE);</li> <li>b. The testing shall take place under maximum and minimum (<math>\geq 3,000</math> scfm) loading conditions that are representative of the facility's operation;</li> <li>c. The Permittee shall submit a pretest protocol to MassDEP for review at least 45 days prior to the anticipated test date. The protocol shall include a description of the proposed test port locations, sampling equipment, testing procedures, and operating conditions;</li> <li>d. The Permittee shall submit the final emission test report to MassDEP within 45 days after the completion of the compliance stack testing. The report shall, at a minimum, include documentation of all test findings and a description of operating parameters.</li> </ul>
9	<p>7. In accordance with 310 CMR 7.02(3)(d), the Permittee shall monitor to demonstrate compliance for each calendar month and 12 consecutive months, the emission limits in Table 2. Such monitoring shall include, but is not limited to:</p> <ul style="list-style-type: none"> <li>a. Type of operation (Kopex wrap, parts washer, hand cleaning, or paint striping);</li> <li>b. The date;</li> <li>c. Name of VOC/HAP containing product used;</li> <li>d. Gallons of VOC/HAP containing product used;</li> <li>e. VOC/HAP content of the product used (lb/gal).</li> </ul>
Facility-wide	8. The Permittee shall monitor all operations to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration.
	9. If and when MassDEP requires it, the Permittee shall conduct emission testing in accordance with USEPA Reference Test Methods and regulation 310 CMR 7.13.

**Table 3 Key:**

EU# = Emission Unit Number  
 CMR = Code of Massachusetts Regulations  
 RTO = Regenerative Thermal Oxidizer  
 VOC = Volatile Organic Compound  
 PTFE = Polytetrafluoroethylene  
 HAP = Hazardous Air Pollutant

°F = degrees Fahrenheit  
 MassDEP = Massachusetts Department of Environmental Protection  
 scfm = standard cubic feet per minute  
 lb/gal = pounds per gallon  
 USEPA = United States Environmental Protection Agency

<b>Table 4</b>	
<b>EU#</b>	<b>Record Keeping Requirements</b>
1-8	<p>1. In accordance with 310 CMR 7.02(3)(e), the Permittee shall record, by the 15<sup>th</sup> day of each month, records demonstrating compliance with the emission limits in Table 2 for the previous calendar month and 12 consecutive months. Such recordkeeping shall include, but is not limited to:</p> <ul style="list-style-type: none"> <li>a. The date;</li> <li>b. Gallons of Isopar G Fluid used;</li> <li>c. VOC/HAP content of the Isopar G Fluid (lb/gal);</li> <li>d. Weight of PTFE mix used (lb/month);</li> <li>e. Weight of cone scrap sent offsite for recovery (lb/month);</li> <li>f. Hours of actual operation of each extruder;</li> <li>g. Weight of VOC/HAP emitted (ton/month).</li> </ul>
	<p>2. In accordance with 310 CMR 7.02(3)(e), the Permittee shall record the RTO exit temperature with date and time using a continuous chart recorder.</p>
	<p>3. In accordance with 310 CMR 7.02(3)(e), the Permittee shall record calibrations of the thermocouple(s), and inspection and service calls for the RTO.</p>
	<p>4. In accordance with 310 CMR 7.02(3)(e), the Permittee shall record and the operator shall initial records indicating:</p> <ul style="list-style-type: none"> <li>a. Date and time of all alarms due to low temperature (<math>\leq 1,484^{\circ}\text{F}</math>) of the RTO;</li> <li>b. Date, time and duration of all shutdowns due to insufficient temperature (<math>\leq 1,450^{\circ}\text{F}</math>) of the RTO;</li> <li>c. Date, time, cause, corrective action, and duration of all exhaust bypasses to atmosphere due to an emergency shut-down of the RTO.</li> </ul>
9	<p>5. In accordance with 310 CMR 7.02(3)(e), the Permittee shall record the following:</p> <ul style="list-style-type: none"> <li>a. Type of operation (Kopex wrap, parts washer, hand cleaning, or paint striping);</li> <li>b. The date</li> <li>c. Name of VOC/HAP containing product used;</li> <li>d. Amount of VOC/HAP containing product used;</li> <li>e. VOC/HAP content of the product used (lb/gal);</li> <li>f. Weight of VOC/HAP emitted (ton/month).</li> </ul>

Table 4	
EU#	Record Keeping Requirements
Facility-wide	6. The Permittee shall maintain adequate records on-site to demonstrate compliance with all operational, production, and emission limits contained in Table 2 above. Records shall also include the actual emissions of air contaminant(s) emitted for each calendar month and for each consecutive twelve month period (current month plus prior eleven months). These records shall be compiled no later than the 15 <sup>th</sup> day following each month. An example of a MassDEP approved record keeping form, in Microsoft Excel format, can be downloaded at: <a href="http://www.mass.gov/dep/air/approvals/aqforms.htm#report">http://www.mass.gov/dep/air/approvals/aqforms.htm#report</a> .
	7. The Permittee shall maintain a copy of this Plan Approval, underlying Application and the most up-to-date SOMP for the EU(s), and PCD(s) approved herein on-site.
	8. The Permittee shall maintain a record of routine maintenance activities performed on the approved EU(s), PCD(s) and monitoring equipment. The records shall include, at a minimum, the type or a description of the maintenance performed and the date and time the work was completed.
	9. The Permittee shall maintain a record of all malfunctions affecting air contaminant emission rates on the approved EU(s), PCD(s), and monitoring equipment. At a minimum, the records shall include: date and time the malfunction occurred; description of the malfunction; corrective actions taken; the date and time corrective actions were initiated and completed; and the date and time emission rates and monitoring equipment returned to compliant operation.
	10. The Permittee shall maintain records to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration.
	11. The Permittee shall maintain records required by this Plan Approval on-site for a minimum of five (5) years.
	12. The Permittee shall make records required by this Plan Approval available to MassDEP and USEPA personnel upon request.

**Table 4 Key:**

EU# = Emission Unit Number  
 CMR = Code of Massachusetts Regulations  
 RTO = Regenerative Thermal Oxidizer  
 VOC = Volatile Organic Compound  
 PTFE = Polytetrafluoroethylene  
 SOMP = Standard Operating and Maintenance Procedures

°F = degrees Fahrenheit  
 MassDEP = Massachusetts Department of Environmental Protection  
 scfm = standard cubic feet per minute  
 lb/gal = pounds per gallon  
 USEPA = United States Environmental Protection Agency  
 HAP = Hazardous Air Pollutant

Table 5	
EU#	Reporting Requirements
Facility-wide	1. The Permittee shall submit to MassDEP all information required by this Plan Approval over the signature of a “Responsible Official” as defined in 310 CMR 7.00 and shall include the Certification statement as provided in 310 CMR 7.01(2)(c).
	2. The Permittee shall notify the Western Regional Office of MassDEP, BAW Section Chief by telephone (413) 755-2115, email, <a href="mailto:marc.simpson@state.ma.us">marc.simpson@state.ma.us</a> or fax (413) 784-1149, as soon as possible, but no later than one (1) business day after discovery of an exceedance(s) of Table 2 requirements. Operation of the RTO at a temperature of $\leq 1,484^{\circ}\text{F}$ (3 minute average) constitutes a deviation from the conditions of the Final Approval (#1-P-10-030, dated April 28, 2011) and may be a violation of the “Regulations,” unless attributable to a malfunction or other event beyond the reasonable control of the Permittee.  A written report shall be submitted to the Section Chief at MassDEP within three (3) business days thereafter and shall include: identification of exceedance(s), duration of exceedance(s), reason for the exceedance(s), corrective actions taken, and action plan to prevent future exceedance(s).
	3. The Permittee shall report annually to MassDEP, in accordance with 310 CMR 7.12, all information as required by the Source Registration/Emission Statement Form. The Permittee shall note therein any minor changes (under 310 CMR 7.02(2)(e), 7.03, 7.26, etc.), which did not require Plan Approval.
	4. The Permittee shall provide a copy to MassDEP of any record required to be maintained by this Plan Approval within 30-days from MassDEP’s request.

**Table 5 Key:**

EU# = Emission Unit Number  
 CMR = Code of Massachusetts Regulations  
 RTO = Regenerative Thermal Oxidizer

$^{\circ}\text{F}$  = degrees Fahrenheit  
 MassDEP = Massachusetts Department of Environmental Protection  
 BAW = Bureau of Air and Waste

#### 4. **SPECIAL TERMS AND CONDITIONS**

The Permittee is subject to, and shall comply with, the following special terms and conditions:

- A. The Permittee shall comply with the Special Terms and Conditions as contained in Table 6 below:

<b>Table 6</b>	
<b>EU#</b>	<b>Special Terms and Conditions</b>
1-8	1. The Permittee shall ensure that the RTO is operated and maintained in accordance with the Manufacturer's recommendations.
	2. The Permittee shall ensure that the RTO is operational whenever the PTFE mixing booths, extrusion machines, sinter ovens, and/or winding room are used or operated.
	3. The Permittee shall ensure that any process equipment ducted to the RTO is automatically shutdown if the RTO operating temperature drops below 1,450 °F (3 minute average).
	4. The Permittee shall store billet scrap in an enclosed container at all times except while loading or unloading billet scrap.
Facility-wide	5. The Permittee shall institute the following BMPs: <ul style="list-style-type: none"> <li>a. Store all VOC-containing materials used for surface preparation, cleaning, and rework in closed containers;</li> <li>b. Ensure that mixing and storage containers used for VOC-containing materials used for surface preparation, cleaning and rework are kept closed at all times except when depositing or removing these materials;</li> <li>c. Minimize spills of VOC-containing materials used for surface preparation, cleaning, and rework;</li> <li>d. Convey VOC-containing materials used for surface preparation, cleaning, and rework from one location to another in closed containers or pipes;</li> <li>e. Minimize VOC emissions from cleaning of application, storage, mixing, and conveying equipment by ensuring that:               <ul style="list-style-type: none"> <li>i. equipment cleaning is performed without atomizing the cleanup solvent; and</li> <li>ii. all spent solvent is captured in closed containers;</li> </ul> </li> <li>f. Store and dispose of all absorbent materials, such as cloth or papers that are contaminated with VOC-containing materials used for surface preparation, cleaning, and rework in non-absorbent containers that are kept closed except when placing materials in or removing materials from the container.</li> </ul>

<b>Table 6</b>	
<b>EU#</b>	<b>Special Terms and Conditions</b>
Facility-wide	6. Any prior Plan Approvals issued under 310 CMR 7.02 shall remain in effect unless specifically changed or superseded by this Plan Approval. The Facility shall not exceed the emission limits and shall comply with approved conditions specified in the prior Plan Approval(s) unless specifically altered by this Plan Approval.

**Table 6 Key:**

EU# = Emission Unit Number

CMR = Code of Massachusetts Regulations

RTO = Regenerative Thermal Oxidizer

VOC = Volatile Organic Compound

°F = degrees Fahrenheit

MassDEP = Massachusetts Department of Environmental Protection

BMP = Best Management Practices

- B. The Permittee shall install and use an exhaust stack, as required in Table 7, on each of the Emission Units that is consistent with good air pollution control engineering practice and that discharges so as to not cause or contribute to a condition of air pollution. Each exhaust stack shall be configured to discharge the gases vertically and shall not be equipped with any part or device that restricts the vertical exhaust flow of the emitted gases, including but not limited to rain protection devices known as “shanty caps” and “egg beaters.” The Permittee shall install and utilize exhaust stacks with the following parameters, as contained in Table 7 below, for the Emission Units that are regulated by this Plan Approval:

<b>Table 7</b>				
<b>EU#</b>	<b>Stack Height Above Ground (feet)</b>	<b>Stack Inside Exit Dimensions (feet)</b>	<b>Stack Gas Exit Velocity Range (feet per second)</b>	<b>Stack Gas Exit Temperature Range (°F)</b>
1-8	30	2.25	13 - 66	250 - 450

**Table 7 Key:**

EU# = Emission Unit Number

°F = Degree Fahrenheit

## **5. GENERAL CONDITIONS**

The Permittee is subject to, and shall comply with, the following general conditions:

- A. Pursuant to 310 CMR 7.01, 7.02, 7.09 and 7.10, should any nuisance condition(s), including but not limited to smoke, dust, odor or noise, occur as the result of the operation of the Facility, then the Permittee shall immediately take appropriate steps including shutdown, if necessary, to abate said nuisance condition(s).
- B. If asbestos remediation/removal will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that all removal/remediation of asbestos shall be done in accordance with 310 CMR 7.15 in its entirety and 310 CMR 4.00.
- C. If construction or demolition of an industrial, commercial or institutional building will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that said construction or demolition shall be done in accordance with 310 CMR 7.09(2) and 310 CMR 4.00.
- D. Pursuant to 310 CMR 7.01(2)(b) and 7.02(7)(b), the Permittee shall allow MassDEP and / or USEPA personnel access to the Facility, buildings, and all pertinent records for the purpose of making inspections and surveys, collecting samples, obtaining data, and reviewing records.
- E. This Plan Approval does not negate the responsibility of the Permittee to comply with any other applicable Federal, State, or local regulations now or in the future.
- F. Should there be any differences between the Application and this Plan Approval, the Plan Approval shall govern.
- G. Pursuant to 310 CMR 7.02(3)(k), MassDEP may revoke this Plan Approval if the construction work is not commenced within two years from the date of issuance of this Plan Approval, or if the construction work is suspended for one year or more.
- H. This Plan Approval may be suspended, modified, or revoked by MassDEP if MassDEP determines that any condition or part of this Plan Approval is being violated.
- I. This Plan Approval may be modified or amended when in the opinion of MassDEP such is necessary or appropriate to clarify the Plan Approval conditions or after consideration of a written request by the Permittee to amend the Plan Approval conditions.

- J. The Permittee shall conduct emission testing, if requested by MassDEP, in accordance with USEPA Reference Test Methods and regulation 310 CMR 7.13. If required, a pretest protocol report shall be submitted to MassDEP at least 30 days prior to emission testing and the final test results report shall be submitted within 45 days after emission testing.
- K. Pursuant to 310 CMR 7.01(3) and 7.02(3)(f), the Permittee shall comply with all conditions contained in this Plan Approval. Should there be any differences between provisions contained in the General Conditions and provisions contained elsewhere in the Plan Approval, the latter shall govern.

## **6. MASSACHUSETTS ENVIRONMENTAL POLICY ACT**

MassDEP has determined that the filing of an Environmental Notification Form (ENF) with the Secretary of Energy & Environmental Affairs, for air quality control purposes, was not required prior to this action by MassDEP. Notwithstanding this determination, the Massachusetts Environmental Policy Act (MEPA) and 301 CMR 11.00, Section 11.04, provide certain "Fail-Safe Provisions," which allow the Secretary to require the filing of an ENF and/or an Environmental Impact Report (EIR) at a later time.

## **7. APPEAL PROCESS**

This Plan Approval is an action of MassDEP. If you are aggrieved by this action, you may request an adjudicatory hearing. A request for a hearing must be made in writing and postmarked within twenty-one (21) days of the date of issuance of this Plan Approval.

Under 310 CMR 1.01(6)(b), the request must state clearly and concisely the facts, which are the grounds for the request, and the relief sought. Additionally, the request must state why the Plan Approval is not consistent with applicable laws and regulations.

The hearing request along with a valid check payable to the Commonwealth of Massachusetts in the amount of one hundred dollars (\$100.00) must be mailed to:

Commonwealth of Massachusetts  
Department of Environmental Protection  
P.O. Box 4062  
Boston, MA 02211

This request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below. The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority.

MassDEP may waive the adjudicatory hearing-filing fee for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file, together with the hearing request as provided above, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

Should you have any questions concerning this Plan Approval, please contact Amy Stratford by telephone at (413) 755-2144, or in writing at the letterhead address.

This final document copy is being provided to you electronically by the  
Department of Environmental Protection. A signed copy of this document  
is on file at the DEP office listed on the letterhead.

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Marc Simpson  
Section Chief  
Bureau of Air and Waste

Enclosure

ecc: James Gagnon, O'Reilly, Talbot & Okun Associates, Inc.  
MassDEP/Boston - Yi Tian